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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,215	07/29/2003	Toshio Sugimoto	3531.68229	5318

7590 05/21/2004  
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EXAMINER

BERNATZ, KEVIN M

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/629,215

Applicant(s)

SUGIMOTO ET AL.

Examiner

Kevin M Bernatz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-8 is/are rejected.
- 7) ☒ Claim(s) 2 and 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/29/2003</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: "Magneto-Optical Recording Medium Possessing a Magnetic Assist Layer".

### ***Claim Objections***

2. Claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 4 – 8 are rejected under 35 U.S.C. 102(a), 102(b) and/or 102(e) as being anticipated by Tamanoi et al. (U.S. Patent No. 6,180,268 B1).

5. Claims 1 and 4 – 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Tamanoi et al. (JP 11-110839 A). See Tamanoi et al. (US. Patent No. 6,180,268 B1), which is the English language equivalent of JP '839 A.

Regarding claims 1 and 5, Tamanoi et al. disclose a magneto-optical recording medium (*Title*) comprising a magnetic recording layer for recording and holding information (*Figure 4, layer 15 and Table 1 – “recording layer”*), a magnetic reproducing layer (*Figure 4, layer 13*) provided on one side of said magnetic recording layer on which said light beam is incident (*Figures 4 and 8, side of layer 15 facing layer 14*), a nonmagnetic layer provided on another side of said magnetic recording layer (*Figure 4, layer 16 and Table 1 – “SiN intermediate layer”*) opposite to another side on which a light beam is incident (*Figures 4 and 8, side of layer 15 facing layer 14*), and a magnetic assist layer provided on said magnetic layer (*Figure 4, layer 17 and Table 1 – First auxiliary layer*), said magnetic assist layer having a coercive force smaller than an external magnetic field applied in recording or reproducing (*Table 1, Coercive forces of recording layer and 1<sup>st</sup> auxiliary layer and col. 7, lines 14 – 31 which teaches “applying a recording magnetic field which is larger than the coercive force Hc3 of the recording layer”, i.e. >12,000 Oe from Table 1*).

The Examiner also notes that the limitation “having a coercive force smaller than an external magnetic field applied in recording or reproducing” is not solely a function of the recording medium, per se, since the apparatus applies the external magnetic field.

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Therefore, this limitation is deemed to not be further limiting in so far as the structure of the product is concerned, provided the layer is magnetic and has a coercivity (i.e. if a 50,000 Oe external field is applied, almost any layer will have a coercive force smaller than the external magnetic field).

Regarding the limitation "having a configuration such that information recorded can be read from a region smaller than a beam spot by applying an external magnetic field and directing a light beam in reproducing" is met by the Tamanoi et al. invention since the Tamanoi et al. invention is a Magnetically induced Super Resolution (MSR) medium (*col. 1, lines 5 – 80* and the above limitations is met by MSR reproduction (*col. 1, lines 31 – 35*).

Regarding claims 4 and 6, Tamanoi et al. disclose Curie temperatures meeting applicants' claimed relative value limitations (*col. 6, line 39 and Table 1*).

Regarding claims 7 and 8, Tamanoi et al. disclose a magnetic assist layer comprising a rare-earth (Gd) – transition metal (FeCo) amorphous alloy film meeting applicants' claimed limitations (*Table 1 – "GdFeCo" alloy for first auxiliary layer*).

### ***Allowable Subject Matter***

6. The following is a statement of reasons for the indication of allowable subject matter: claims 2 and 3 are allowable over the prior art of record since the prior art of record fails to teach or render obvious a magnetic assist layer which has magnetic isotropy. The Examiner notes that applicants' specification provides explicit teachings that to obtain a magnetic assist layer having magnetic isotropy, specific processing

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conditions must be followed and that the behavior is not inherent to magnetic/non-magnetic super lattice structures such as  $\{\text{Co/Pt}\}_n$  (*specification pages 21 – 22*).

### **Conclusion**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (571) 272-1505. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (571) 272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin M. Bernatz  
Patent Examiner

May 10, 2004